

REMARKS

Applicants respectfully request entry of the amendments and remarks submitted herein. Claims 18, 32, 35 and 37 have been amended to indicate that "said stabilized starch has improved viscosity stability and/or improved setting properties upon cooling compared to starch produced in the absence of the treating step a)." Support for this amendment can be found, for example, in original claims 29 and 43-45 and in paragraphs [0049], [0097] and [0098] of the published application (US 2007/0039612). In addition, claims 29 and 43-45 have been canceled herein without prejudice to continued prosecution.

Applicants note that, at page 5 of the current Office Action, claims 18-23, 25-27, 29, 32 and 37 are indicated as rejected under 35 U.S.C. §103 over Russell et al. (*J. Cereal Sci.*, 1987, 5:83-100). However, under the 'Conclusion' section at page 8 of the current Office Action, claims 18-23, 25-27, 29, 32 and 37 are indicated as rejected under 35 U.S.C. §102(b) over Russell et al. Applicants have argued the rejection over Russell et al. as an obviousness rejection in the Remarks section below, but Applicants respectfully request clarification from the Examiner. In addition, Applicants submit that, if the Examiner intended the rejection over Russell et al. to be under 35 U.S.C. §102(b), it would be improper, based on the ambiguity in the current Office Action, for the Examiner to make the next Office Action Final. See MPEP §706.07 (e.g., §MPEP 706.07(c)).

Claims 18-28 and 30-42 are currently pending. Reconsideration of the pending application is respectfully requested.

The 35 U.S.C. §102 Rejections

Claims 18, 20-22, 25-26, 30-31, 38, 40 and 43-45 stand rejected under 35 U.S.C. §102(b) as being anticipated by Fitt et al. (U.S. Patent No. 5,385,608); and claims 18-23, 25-26 and 40-41 stand rejected under 35 U.S.C. §102(b) as being anticipated by Gabel et al. (U.S. Patent No. 3,607,393). According to the Examiner, Fitt et al. and Gabel et al. both disclose the claimed methods (treating starch with a reactant, oxidizing the starch, and recovering the purified starch) and, therefore, anticipate the pending claims. This rejection is respectfully traversed.

Fitt et al. discloses absorbable dusting powders (e.g., of the type used in medical gloves) made from starches having reduced protein content “and a low level of carboxyl groups generated through the slight oxidation of hydroxyl groups” (column 1, lines 18-20). Fitt et al. discloses that “the objective [is] to remove as much protein as possible...and oxidize from about 0.03% w/w to about 0.5% w/w of the hydroxyl groups” (see, for example, column 5, lines 16-19). In addition, although the hypochlorite treatment causes a whitening of the product, Fitt et al. does not disclose a separate bleaching step. On the other hand, the pending method claims require that the organoleptic impurities and/or precursors of organoleptic impurities be converted into hydrolyzed or oxidatively-degraded organoleptic impurities and/or hydrolyzed or oxidatively-degraded precursors of organoleptic impurities and also require a bleaching step.

Gabel et al. discloses a starch that exhibits increased adhesion and cohesion when applied to fresh or frozen foods. Gabel et al. discloses treating starch with a mixture of hypohalogenous acid and halogen gas, followed by treatment with an oxidizing agent. See, for example, column 1, lines 61-64. It is noted, however, that the oxidizing agent actually acts as a reducing agent to discharge any residual halogen present (see column 3, lines 52-61). In addition, Gabel et al. does not disclose a bleaching step. On the other hand, the pending method claims require that the organoleptic impurities and/or precursors of organoleptic impurities be converted into hydrolyzed or oxidatively-degraded organoleptic impurities and/or hydrolyzed or oxidatively-degraded precursors of organoleptic impurities and also require a bleaching step.

Neither of the cited references disclose each and every step of the claimed methods and, therefore, neither of the cited references anticipate the claimed methods. In view of the amendments and remarks herein, Applicants respectfully request that the rejections of the pending claims under 35 U.S.C. §102(b) be withdrawn.

The 35 U.S.C. §103 Rejections

Claims 18-23, 25-27, 29, 32 and 37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Russell et al. (1987, *J. Cereal Sci.*, 5:83-100); claims 18-38, 40-41 and 43-45 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wasserman et al. (U.S. Patent No. 5,959,102) in view of Kettlitz et al. (U.S. Patent No. 6,235,894); and claims 39-40 and 42 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wasserman et al. in view of

Kettlitz et al., further in view of Wongsuragrai et al. (EP 0823439). According to the Examiner, Applicants have not fully demonstrated a surprising difference in stability compared to the prior art of record. Applicants respectfully traverse these rejections.

As indicated herein, the independent method claims have been amended to recite that the “stabilized starch has improved viscosity stability and/or improved setting properties upon cooling compared to starch produced in the absence of the treating step a).” As disclosed in Applicants’ specification, the “treatment with active chlorine is already resulting in a stabilization as is mentioned in EP 0 811 633, but surprisingly the stabilization effect is further pronounced with the treatment of the current invention” (see, for example, paragraph [0049]). Applicants note that the “treatment of the current invention” in paragraph [0049] refers to the claimed step of “treating starch with an amount of a reactant effective to convert organoleptic impurities and/or precursors of organoleptic impurities into hydrolyzed or oxidatively-degraded organoleptic impurities and/or hydrolyzed or oxidatively-degraded precursors of organoleptic impurities”. See, for example, Tables 1 and 3 in the present application, which contain the data showing the improved features of starch produced by the claimed methods compared to starch that is only bleached. Thus, the data provided in the Examples fully demonstrates a surprising difference in stability between starch made by the claimed processes and the starches made by the prior art methods, and this surprising difference is now recited in the pending claims.

In addition, the Examiner asserted that both Wasserman et al. and Kettlitz et al. teach methods for purifying raw starches, which are the same as the instant application, and that the combination of Wasserman et al. and Kettlitz et al. discloses the same reactants and applies the same process conditions. (OA at page 6). While Wasserman et al. discloses using a very particular thermolysin to purify starch granules and Kettlitz et al. discloses reacting high viscosity starch with activated chlorine (Applicants note that Kettlitz et al. is the U.S. counterpart of EP 0 811 633, which is discussed in the paragraph above), the Examiner has not identified a reason that would prompt one of ordinary skill in the art to combine Wasserman et al. and Kettlitz et al. Significantly, the claimed method is not for purification; the claimed method results in a starch that exhibits significantly greater stability than starch that is simply bleached. A stabilized starch having the claimed features (i.e., “improved viscosity stability and/or improved setting properties upon cooling compared to starch produced in the absence of the

treating step a)") is not disclosed or suggested by the combination of Wasserman et al. or Kettlitz et al.

Significantly, the Examiner asserted that Applicants' previous arguments (i.e., that neither Wasserman et al. or Kettlitz et al. discloses "converting organoleptic impurities and/or precursors of organoleptic impurities into hydrolyzed or oxidatively-degraded organoleptic impurities") are not persuasive because "the claims are directed towards a process for preparing stabilized starches, involving steps of (a) treating raw starch with a reactant, (b) bleaching, (c) recovering stabilized starches." (OA at page 6). Contrary to the Examiner's assertion, however, step (a) of the claimed methods is not simply "treating raw starch with a reactant"; step (a) of the claimed methods require "treating starch with an amount of a reactant *effective to convert organoleptic impurities and/or precursors of organoleptic impurities into hydrolyzed or oxidatively-degraded organoleptic impurities and/or hydrolyzed or oxidatively-degraded precursors of organoleptic impurities*, respectively, thereby producing converted starch" (emphasis added). It is well established patent law that a process invention must be considered as a whole when reviewed for patentability against any prior art. See *In re Kuehl*, 177 USPQ 250, 256 (CCPA 1973).

The combinations of cited references do not render the claimed process obvious. In view of the amendments and remarks herein, Applicants respectfully request that the rejections of the pending claims under 35 U.S.C. §103(a) be withdrawn.

CONCLUSION

Applicants respectfully request allowance of claims 18-28 and 30-42. If a telephone call to the undersigned would expedite prosecution, the Examiner is encouraged to do so. Please apply any charges or credits to Deposit Account No. 06-1050.

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